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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,130	07/15/2003	Mao Zhang		6897

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EXAMINER

VALENTI, ANDREA M

ART UNIT PAPER NUMBER

3643

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,130

Applicant(s)

ZHANG, MAO

Examiner

Andrea M. Valenti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent JP 6116073 to Takenaka Komuten Co. in view of PCT WO 74478 A1 to Fleischmann, U.S. Patent No. 5,985,538 to Stachecki and *New Scientist*, "Feedback", vol. 141, no. 1981, page 92, 26 March 1994.

Regarding Claims 1 and 8, Takenaka teaches a method for closed-loop (Takenaka translation page 6 first line of paragraph [0018]) regeneration of food for humans during a long-term mission in space (Takenaka translation page 1 line 6) comprising: bringing eggs on a long-term mission in space; rearing maggots and pupa in space from the fly eggs by feeding the maggots human waste and plant crop waste (Takenaka Fig. 1); and preparing a powder from the maggots that have been reared (Takenaka translation page 3 paragraph [008] first line).

Takenaka is silent on freezing fly eggs in liquid nitrogen. However, Fleischmann teaches that it is old and notoriously well-known to store and/or transport fly eggs in a container under conditions that inhibit their development (Fleischmann abstract) and means for inhibiting development include cooling the eggs. Stachecki teaches that it is old and notoriously well-known to use liquid nitrogen to freeze eggs (Stachecki Col. 3

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line 62-67). It would have been obvious to one of ordinary skill in the art to modify the teachings of Takenaka with the teachings of Fleischmann and Stachecki at the time of the invention for the advantage of keeping eggs alive for prolonged periods of time and to transport the eggs without damage to maintain a certain supply of eggs for a period of times so that the respective actual needs can be satisfied as taught by Fleischmann and Stachecki is merely the selection of a known means of cooling.

Takenaka as modified does not explicitly teach feeding the maggot powder directly to the humans as food. However, the New Scientist article "Feedback" teaches that it is old and well-known for humans to eat food derived from maggots. It would have been obvious to one of ordinary skill in the art to modify the teachings of Takenaka at the time of the invention for the known protein nutrients.

Regarding Claim 3, Takenaka as modified inherently teaches using the maggots as a carrier by feeding the maggots with vitamins, minerals, electrolytes, and antibiotics that humans need (Fleischmann teaches feeding maggots nutrient solutions, see U.S. Patent No. 6,557,487 for an English translation of Fleischmann; maggots will inherently receive these nutrients from the animal waste).

Regarding Claim 4, Takenaka as modified teaches rearing flies in the event that the fly eggs are lost during the long term mission (Takenaka translation page 3 paragraph [006] line 3).

Regarding Claim 6, Takenaka as modified teaches using the maggots, the pupa, and the maggot powder as feedstuff for poultry, aquatic animals, amphibians, and livestock; and using the poultry, aquatic animals, amphibians, livestock, and their eggs

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as nourishing food for the humans in space (Takenaka translation page 5 paragraph [0014]).

Regarding Claim 7, Takenaka as modified inherently teaches using the residue left after rearing the maggots as fertilizer for crop plants (Takenaka translation Fig. 1); and using the Co₂ produced from the rearing maggots to satisfy growth requirements for crop plants.

Regarding Claim 9, Takenaka as modified teaches raising animals by feeding the animals the maggots and pupa while alive and by feeding the animals the maggot powder; and using the animals and the maggot powder as healthy food for humans to assist in resisting radiation and improving immune abilities (Takenaka page 5 paragraph [0014] and page 5 line 3).

Response to Arguments

Applicant's arguments with respect to claims 1, 3, 4, 6-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Mini-livestock, village development and role of BEDIM; Hardouin,; Universitaire des Sciences Agronomiques de Gembloux, Passage des Deportes, B-5030 Gembloux, Belgium, BASE: Biotechnologie, Agronomie, Societe et Environemnt coil. 1 (2): p.92-99 abstract 1 page.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea M. Valenti whose telephone number is 703-305-3010. The examiner can normally be reached on 7:30am-5pm M-F; Alternating Fridays Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 703-308-2574. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrea M. Valenti
Patent Examiner
Art Unit 3643

09 November 2004


Peter M. Poon
Supervisory Patent Examiner
Technology Center 3600